U.S. Department
of Transportation

Federal Highway Administration

Final Case Study for the National Scenic Byways Study

Economic Impacts of Scenic Byways

Scenic
BYWAYS

September 1990

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Final Case Study

for the

National Scenic Byways Study

ECONOMIC IMPACTS OF SCENIC BYWAYS

SEPTEMBER 1990

Prepared for
The Federal Highway Administration

Submitted by
The Urban Institute

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ECONOMIC IMPACTS OF SCENIC BYWAYS

Actions undertaken to protect, enhance, and promote scenic byways can, in turn, affect tourism revenues, jobs, land values, and the pattern and rate of development. The objective of our project for the National Scenic Byways Study is to develop a framework for economic analysis and case studies documenting these impacts.

A FRAMEWORK FOR ECONOMIC ANALYSIS

The Scenic Byways Study Act of 1989 emphasizes the protection, enhancement, and promotion of existing roads, not the construction of new roads. Examples of actions that might be undertaken in response to these objectives by public agencies and private groups include the following:

- Outright acquisition of corridor areas or acquisition of easements restricting uses of the land that might compromise its scenic or historic quality
- Zoning
- Tax incentives, such as a reduction in tax rates for land retained in an open-space condition
- Construction of complementary facilities such as picnic areas, scenic overlooks, bike and hiking trails, etc.
- Landscaping and interpretive signing
- Elimination of billboards, junkyards, etc.
- Safety improvements

- Signs on Interstates and other major highways directing travelers to scenic byways

- Distribution of maps, brochures, and other promotional materials

Measuring or predicting the economic impacts of actions such as those listed above is a difficult task. The impacts tend to be concentrated along the byway corridor and may not easily be detected using data collected at the county or regional level. Often, several actions may be undertaken at the same time, making their effects difficult to separate. Also, the effects of these actions may not materialize immediately. Other factors not related to the byway, such as changes in fuel price or availability or "shocks" to the local economy such as plant openings or closings can mask the economic impacts of actions related to scenic byways. Cause and effect may be difficult to separate in some cases; for example, the establishment of a strong scenic byways program in an area can both influence and be influenced by decisions to locate privately-owned recreational facilities in the area.

Notwithstanding these difficulties, we believe that decisions about scenic byways should be based on careful consideration and, where practical, quantitative estimates of their economic effects. To assist analysts in developing this information, the following discussion briefly describes potentially important economic impacts of scenic byways and provides a few simple procedures that can be used in estimating these impacts. The discussion is organized under the following headings: tourism revenues, jobs, multiplier effects, and land use and development patterns.

Tourism Revenues

This section presents a simple procedure for estimating the effects of actions to protect, enhance, and promote scenic byways on tourism revenues. Three measures of visitor activity are used in the procedure:

- Vehicle miles of travel on the scenic byway

- Vehicle (or person) hours spent at scenic and historic sites on or near the byway

- Vehicle (or person) nights spent at paid accommodations in the area under consideration

To estimate changes in tourism revenues, the analyst estimates the change in each of these measures, applies unit costs (e.g., $/mile, $/hour, $/night) to these changes, and sums the result.

The three measures were selected to cover the various types of trips that might be attracted to the byway:

- Diverted trips -- These are trips whose primary points of origin and destination are not on the byway itself, but who are attracted to the byway from parallel routes because it is a more pleasant driving experience. Expenditures in the byway area by diverted trips are generally limited to brief stops for fuel, food, and other incidental purchases. These expenditures can be estimated on a per vehicle mile basis.

- Day trips -- These are trips by travelers for whom the byway itself (or a scenic or historic site along the byway) is a primary point of destination, although they do not spend the night there. Relative to diverted trips, day trips involve more time in the byway area and higher expenditures for food and other incidental purchases. In the proposed framework, these additional expenditures are estimated based on the number of vehicle hours spent at scenic or historic sites on or near the byway.

- Overnight trips -- These are trips by travelers for whom the byway itself (or a scenic or historic site along the byway) is a primary point of destination, and who spend one or more nights at hotels, motels,

or campsites in the byway area. Additional tourist expenditures for these trips are estimated from the number of nights spent at accommodations in the area under consideration.

Ideally, unit costs for each of the three measures would be established based on specific information about the area under consideration, taking into account factors such as special fees for admission to scenic and historic attractions, the various types of overnight accommodations available in the area, etc. However, to derive very rough (e.g., order of magnitude) estimates of tourism revenues, the following unit costs might be used:

- $0.15 per vehicle mile on the byway[1]
- $5.00 per vehicle hour parked at scenic or historic sites on the byway[2]
- $35.00 per person night at paid accommodations in the area[3]

Jobs

Increased tourism revenues can create new jobs at motels, eating places, gasoline stations, and other facilities that serve tourists. Increases in employment can be estimated based on ratios of employees to business receipts for industries related to tourism. Ideally, local data on business receipts and employment would be used to establish these ratios.

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[1]Fuel costs are about 5 cents per vehicle mile (assuming $1.00 per gallon and 20 miles per gallon). To estimate expenditures for food and other incidentals, we assume (1) drivers on a long trip stop every four hours for food and spend $16 per vehicle when they stop and (2) an average speed of 40 miles per hour on the scenic byway. Under these assumptions, the rate of expenditure for food and other incidentals is 10 cents per vehicle mile.

[2]We assume expenditures of $4.00 per vehicle hour for food and other incidentals plus an additional $1.00 per hour for admission fees and souvenirs at tourist attractions.

[3]In The 1988-89 Economic Review of Travel in America, the U.S. Travel Data Center estimates that, in 1987, travelers on trips more than 100 miles from their homes spent an average of $35 per person per day in the areas they were visiting.

However, national data can be used in making very rough estimates. Exhibit 1 shows 1988 national data on business receipts, payroll employment, and employees per $1 million of receipts for hotels and motels, eating and drinking places, and amusement and recreation services. For all three sectors combined, the number of employees per $1 million of receipts is 33.

Multiplier Effects

As they circulate through the local or regional economy, direct expenditures by tourists generate additional expenditures by other individuals and businesses. These indirect or secondary effects can be dealt with through the use of "multipliers." Multipliers usually are specified as the total (direct plus indirect) effect on the local or regional economy divided by the direct effect. Thus, a multiplier of 2.5 for tourist expenditures would imply that each dollar spent by a tourist results in a total increase in expenditures of $2.50 -- $1.00 by the tourist and an additional $1.50 by other individuals and businesses.

Multipliers are very difficult to generalize because they will vary depending on the size of the area under consideration. In considering multipliers for tourism expenditures related to scenic byways, it is possible (at least conceptually) to define multipliers for the county or town in which the byway is located, a group of counties such as an SMSA or planning region, the entire state, etc. As the size of the study area is increased, a larger fraction of the money received from tourists will be respent within the area, leading to a higher multiplier. Since multipliers depend critically on the size of the study area under consideration, they are very difficult to generalize. Exhibit 2 shows several tourism multipliers from the literature.

Land Values and Development Patterns

Actions to protect, enhance, and promote scenic byways can affect land values and development patterns in several different ways:

- Improving the scenic quality of a site can increase its value and its attractiveness as a location for residential or commercial development.

EXHIBIT 1

1988 BUSINESS RECEIPTS AND EMPLOYMENT FOR SELECTED TRAVEL INDUSTRY SECTORS

Travel Industry Sector	Business Receipts ($ millions)	Ave. Payroll Employment (thousands)	Employees Per $1 Million of of Receipts
Hotels, motels and tourist courts	54,127	1,538.8	28
Eating and drinking places	157,685	6,360.0	40
Amusement and recreation services	53,922	936.0	17
Total	265,734	8.834.8	33

Source: U.S. Travel Data Center; The 1988-89 Economic Review of Travel in America; Washington, D.C.; 1989.

EXHIBIT 2

MULTIPLIERS FOR TOURISM AND RECREATION EXPENDITURES

Study Area	Multiplier
California Coastal Regions[1]	
North Coast	2.14
San Francisco Bay Area	2.56
North Central Coast	2.33
South Central Coast	2.35
South Coast (inc. San Diego and Los Angeles)	2.74
Walworth County, Wisconsin[2]	1.80
Hawaii[3]	2.58
Northeast Minnesota[4]	1.39
Northwest Lower Michigan[5]	2.52

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[1]Ted Miller et. al.; Inventory and Evaluation of California Coastal Recreation and Aesthetic Resources; Report to Pacific Outer Continental Shelf Office, Bureau of Land Management; The Granville Corporation; 1981.

[2]R.J. Kalter and W.B. Lord; "Measurement of the Impact of Recreation Investments on the Local Economy;" American Journal of Agricultural Economics; 50:243-257; 1968.

[3]William A. Schaffer; "Using Input-Output Analysis to Measure the Impact of Tourist Expenditures: The Case of Hawaii;" Assessing the Economic Impacts of Recreation and Tourism; published by Southeastern Forest Experiment Station; Asheville, NC; 1985.

[4]Wilbur R. Maki; "Measuring Supply-Side Impacts on Tourism/Recreation Industries"; Assessing the Economic Impacts of Recreation and Tourism; published by Southeastern Forest Experiment Station; Asheville, NC; 1985.

[5]Mary Lou Marino and Daniel F. Chappelle; Lodging and Restaurant Establishment Spending Patterns in Northwest Lower Michigan; Research Report 346, Michigan State University, Agricultural Experiment Station; East Lansing, MI; 1978.

- As discussed below, zoning and other restrictions on the type and amount of development on a given property can adversely affect its value. However, restrictions that prevent certain types of development on adjacent or nearby land can increase the value of a property.

- A worsening in site accessibility due to lower speed limits and higher congestion levels can reduce the value of land and its development potential.

- Higher volumes of tourist traffic past a site will increase its value as a commercial site (if zoning permits such development). However, very high volumes of tourist traffic past a site can reduce its attractiveness for residential use.

- Initial increases in tourism may lead to expansion of existing facilities and development of new facilities that in turn attract additional visitors.

- In general, increased income and employment due to tourism can lead to higher land values and additional development.

In Protection Techniques for Scenic Byways: Four Case Studies,[4] The National Trust for Historic Preservation discusses eight techniques for controlling development that can be used to protect scenic or historic resources. The techniques are presented on a continuum from most protective to least protective: (1) fee-simple ownership, (2) scenic or conservation easements, (3) zoning and other ordinances, (4) comprehensive planning, (5) policy statements, (6) tax incentives, (7) local initiative, and (8) scenic designation only. The first three techniques can be used to prevent certain types of development from occurring, while the other five techniques discourage (but do not necessarily prevent) development.

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[4]Prepared for the Federal Highway Administration under Order #DTFH61-90-P-00498; June 1990.

Fee simple ownership of property along a road by a public agency or private organization dedicated to the goal of preservation provides the strongest assurances that the scenic and historic qualities of a road will be preserved. For this technique, the question of land value is moot since the agency or organization acquiring the land generally expects to hold it in perpetuity. Private development of the land is prohibited except under a lease or other special arrangement.

In assessing the impacts of other protection techniques on land values and development patterns, it is important to distinguish the direct effect of applying the technique to the property itself from the indirect effect due to the technique's being applied to adjacent or nearby properties. Generally, the direct effect of easements or zoning ordinances on a property is to decrease its value, by preventing certain uses of the land. For example, part of the value of undeveloped or agricultural land rests in the fact that at some point in the future it may be developed for residential or commercial purposes, so that prohibiting such uses decreases the value of the land.

While the direct effect of easements or zoning being applied to a property is to decrease its value, the indirect effect of these techniques being applied to adjacent or nearby land is to increase land value and development potential. The value of land is determined, in part, by the level of amenities which it provides for residential and other uses. Hence, restrictions on adjacent or nearby land designed to preserve or enhance scenic quality will increase the value of a property and make it a more desirable location for development.

The net effect on land value of easements or zoning -- taking into account both the decrease in land value due to these restrictions being applied to the land itself and the increase in land value due to these restrictions being applied to adjacent or nearby land -- can be positive or negative. For example, if the current value of a parcel of land is based heavily on its desirability as a location for commercial development in the future, then zoning restrictions that prevent commercial development probably will decrease its value. Conversely, if a parcel has already been developed for residential use, and if it is not a desirable location for more intensive development, then techniques that preserve the scenic or historic qualities of the area by controlling development will increase its value.

The fact that fee-simple ownership, easements, or zoning prevent certain types of development from occurring does not necessarily mean that the employment and other economic benefits of the development are lost to the local community. Preventing development from occurring along a scenic byway may simply shift the development to some other location in the community where it is permitted.

The five protection techniques that discourage but do not prevent certain types of development from occurring will have much less impact on land value and development patterns. To the extent that these techniques call attention to local amenities, and indicate the intention of preserving these amenities, the techniques would be expected to increase the value of land and its attractiveness for residential development and commercial development associated with tourism.

CASE STUDY ANALYSES

Case study analyses were conducted to estimate the impact on traffic levels of "Virginia Byway" designation for roads with scenic and historic qualities in the Commonwealth of Virginia. In the framework for economic analysis presented above, changes in traffic levels (measured in vehicle miles) are a key determinant of economic impacts of actions to protect, enhance, and promote scenic byways.

The Virginia Byways Program is a mechanism to provide official recognition of unique road corridors; however, it does not provide for their conservation and protection. Currently, state efforts to promote Virginia Byways as tourist attractions are limited to the posting of Virginia Byway signs on the route itself and green shading of the road on the official state highway map. Conversations with state and local officials and other knowledgeable individuals indicate that local efforts to attract travelers to Virginia Byways vary considerably. In some instances, local agencies have prepared special brochures featuring the byway; in other instances, maps of local attractions do not mention the byway.

We examined traffic data for five Virginia byways to estimate the effect of byway designation on tourism:

- Route 5 in Richmond, Henrico County, Charles City County, James City County, and Williamsburg[5]

- Route 6 in Albemarle and Nelson Counties

- Route 20 in Albemarle County

- Route 151 in Nelson County

- Route 193 in Fairfax County

Each of the five were designated as scenic byways in the mid-1970s. Two of the roads, Route 5 and Route 20, are actively promoted for tourism by local groups. For example, Route 20 is featured in a tourist brochure entitled "Travel the Constitution Route," prepared by the Constitution Highway Association. Route 5 is featured in several tourist brochures, including one prepared by the Berkeley Plantation entitled "Great Historic Plantations and Points of Interest Along the James River." While not actively promoted as scenic byways per se, Routes 6 and 151 are both located near the Skyline Drive in areas that depend heavily on tourism. Route 193 is located in a rapidly growing suburb of Washington, D.C. and is not actively promoted as a scenic byway by local groups.

In analyzing traffic data on Virginia byways, it was necessary to consider other factors (in addition to byway designation) that may have affected traffic on these roads, including the following:

- General economic and traffic growth in the area served by the road

- Fuel price and availability

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[5]Route 5 was examined by The National Trust for Historic Preservation in "Protection Techniques for Scenic Byways: Four Case Studies." The Trust's report provides an in-depth discussion of conditions along the road and changes that have occurred since its designation as a Virginia Byway.

- Construction or upgrading of other roads that might increase or decrease traffic on the road in question

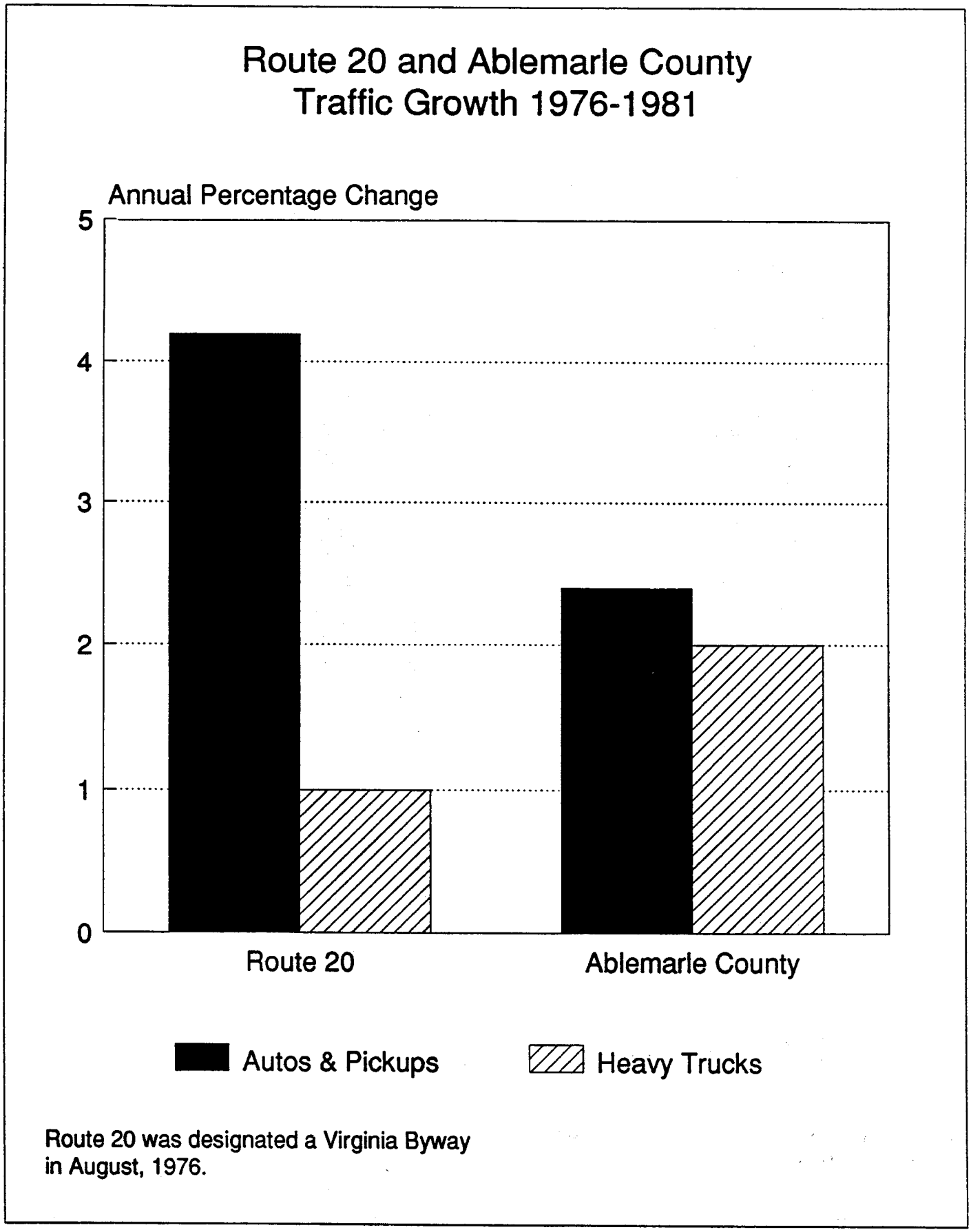
To help adjust for these other factors, we obtained traffic data not only for the byways themselves but also for the counties in which the byways are located. This enables us to answer the question of whether traffic growth rates on the byways were greater or less than the general traffic growth rate for the area in which the byway is located. Also, we examined separately traffic counts for passenger vehicles and heavy trucks. Since heavy truck traffic on a route is unlikely to be greatly affected by designation as a scenic byway, growth rates for heavy trucks serve as a useful point of comparison for growth rates for passenger vehicles. Specifically, the observation that automobile and light truck traffic on a road is growing faster than heavy truck traffic suggests that byway designation might have attracted tourists to the road.

Exhibits 3-7 show the average annual traffic growth rates for the five roads during the five year period following their designation as Virginia Byways. The exhibits also show growth rates during the same period for the counties in which the byways are located. For the two roads that were actively promoted as scenic byways (Routes 5 and 20), growth rates for auto and light truck traffic were 2 to 3 percent greater than growth rates for heavy truck traffic, suggesting that efforts to promote the byways have been successful in attracting tourists. For the three routes that were not actively promoted, only one (Route 151) had a significantly higher growth rate for autos and light trucks than for heavy trucks.

A 2 to 3 percent increase in traffic can have a considerable impact on the local economy in a scenic byway corridor. Currently, Route 5, which is 54 miles long, carries about 200,000 passenger vehicle miles per day. A 2 percent increase in passenger miles would increase tourism revenues by $220,000 per year[6]. Applying the national average ratio of 33 jobs per $1 million of business receipts, tourism revenues of $220,000 would create 7 new jobs in travel-related industries. The Virginia Byway portion of Route 20 , which is 17

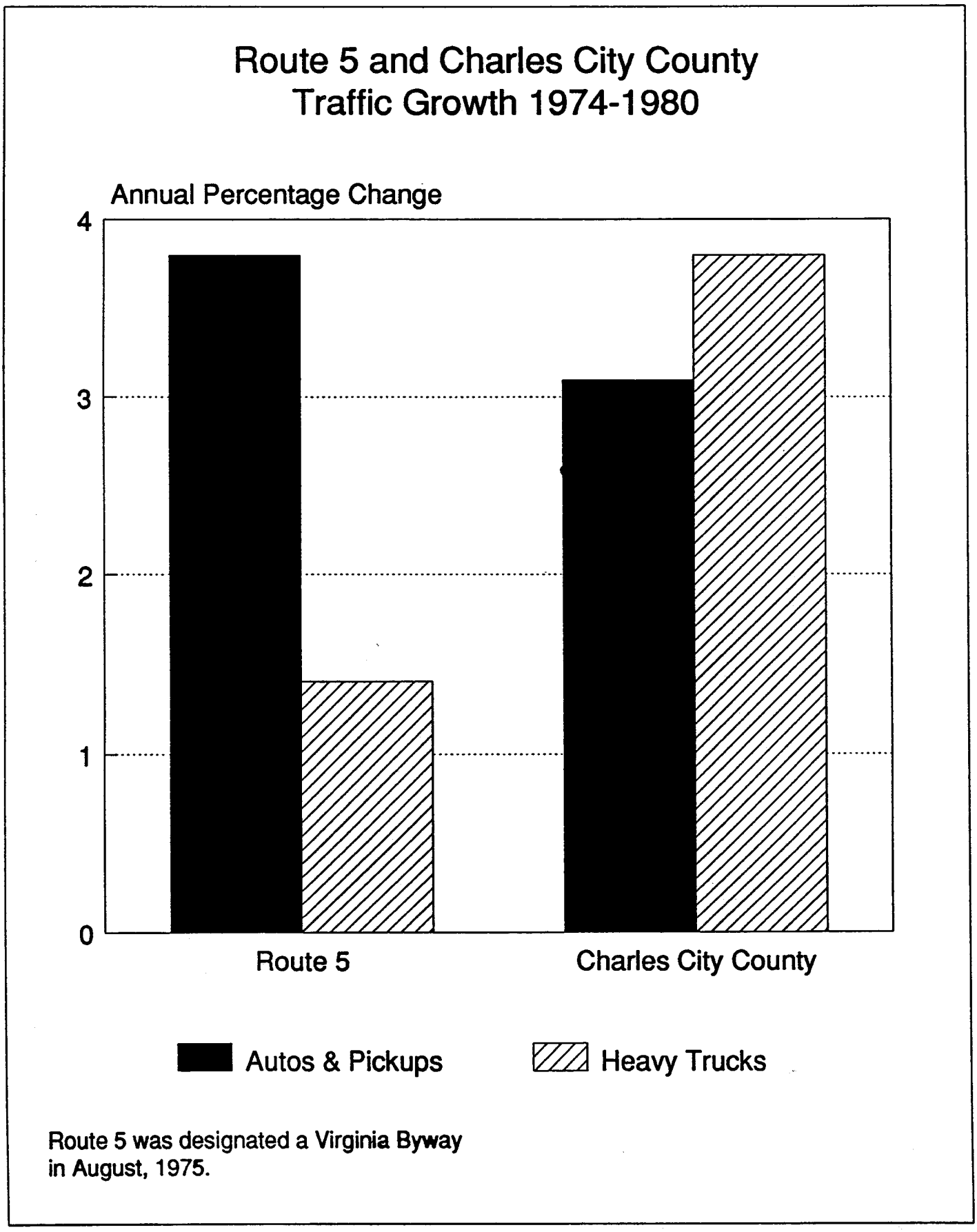
[6]Calculated as (200,000 VMT per day) x (2%) x (365 days per year) x ($0.15 per VMT). See page 4 of this report for a discussion of the assumptions behind the unit cost of $0.15 per VMT.

EXHIBIT 3



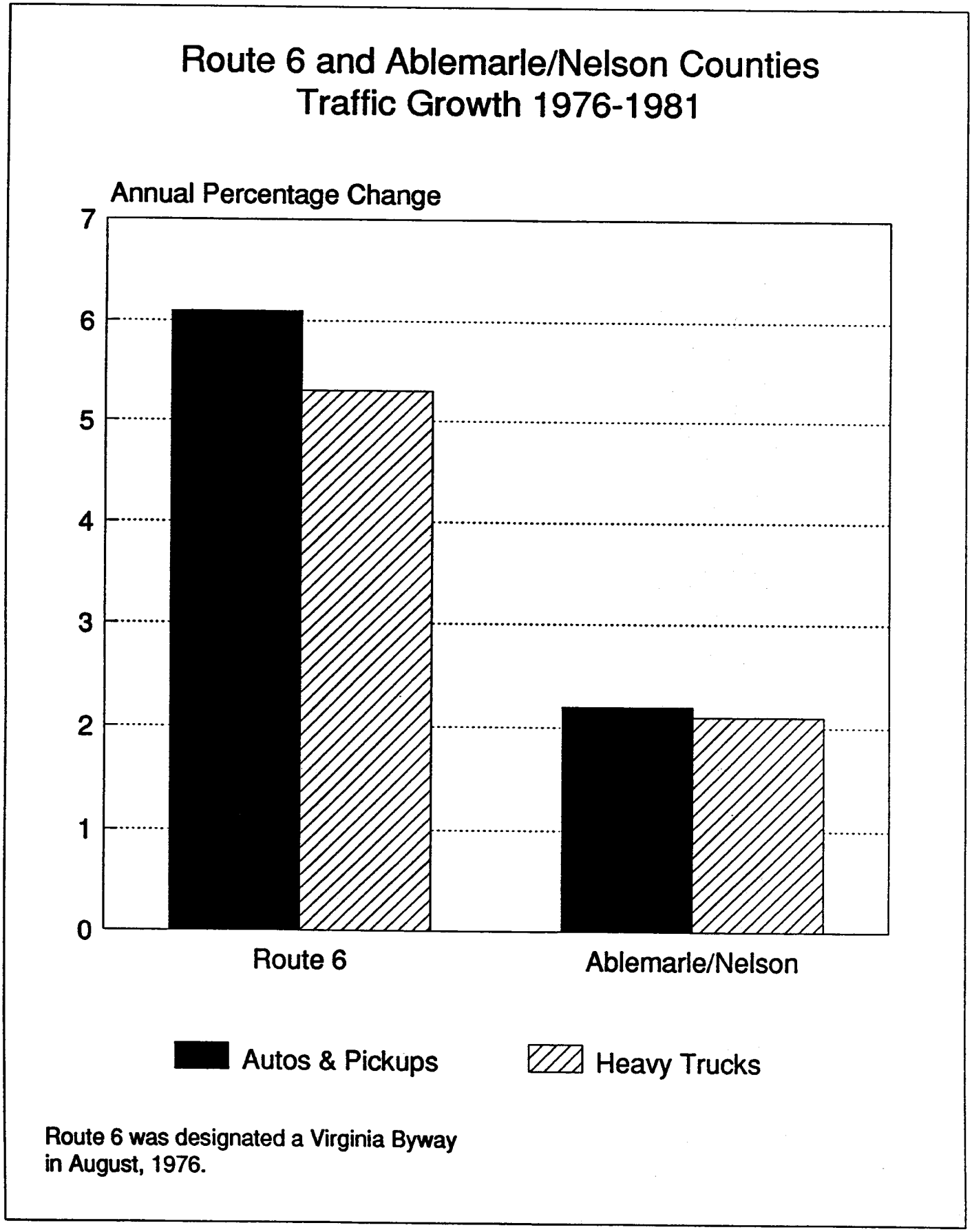
Route 20 was designated a Virginia Byway in August, 1976.

EXHIBIT 4



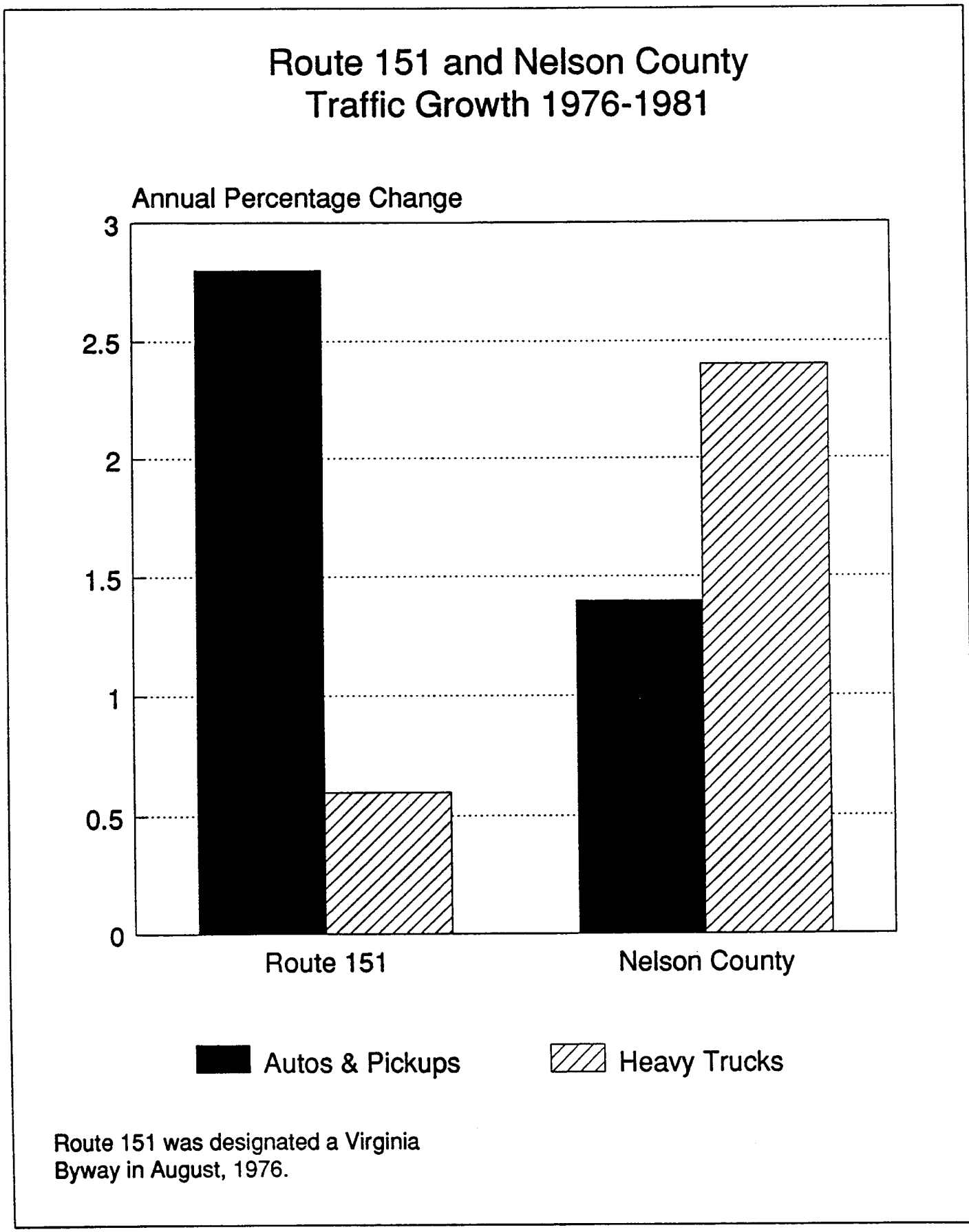
Route 5 was designated a Virginia Byway in August, 1975.

EXHIBIT 5



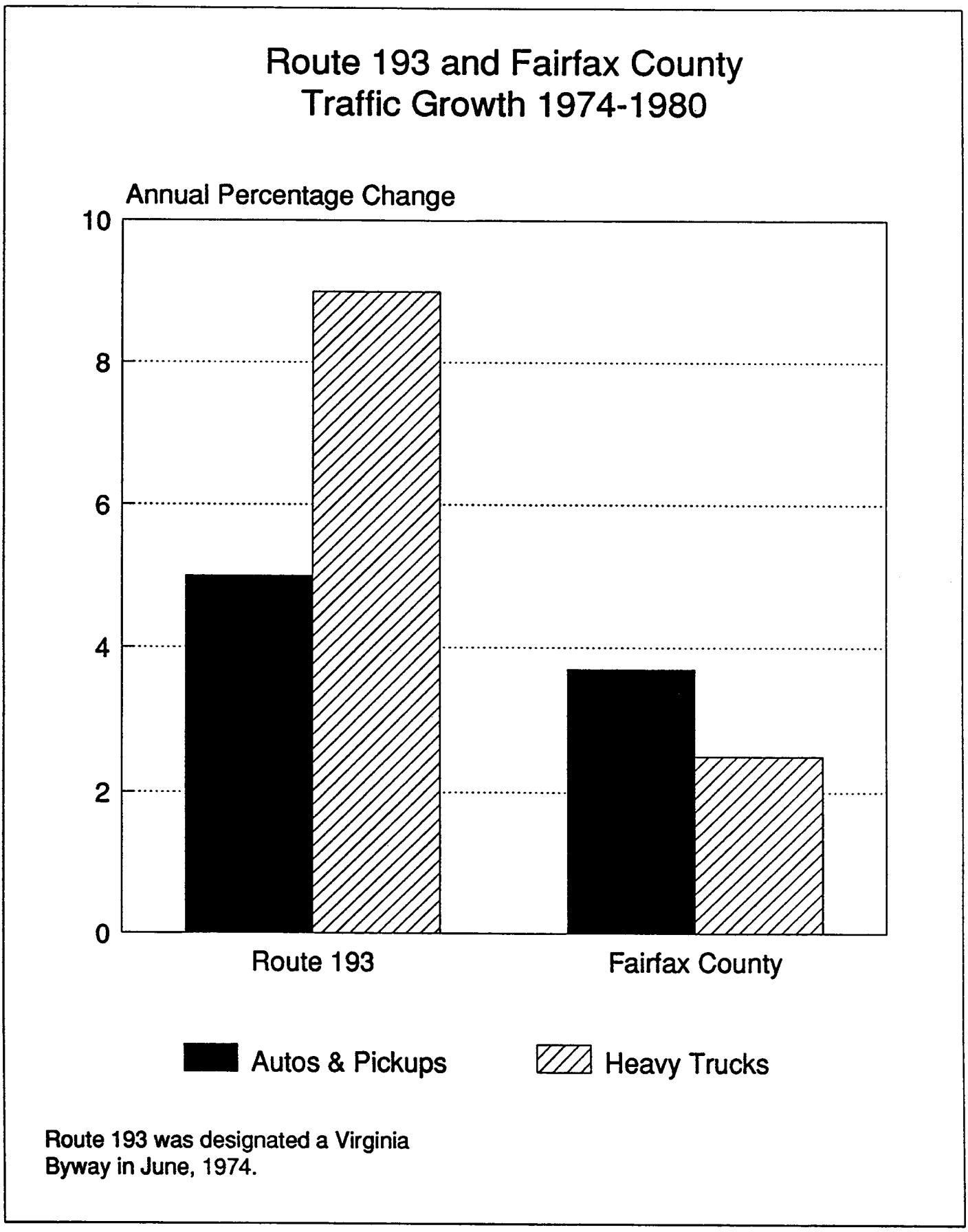
Route 6 was designated a Virginia Byway in August, 1976.

EXHIBIT 6



Route 151 was designated a Virginia Byway in August, 1976.

EXHIBIT 7



Route 193 was designated a Virginia Byway in June, 1974.

miles long, currently carries about 80,000 passenger vehicle miles per day. A 3 percent increase in passenger miles would increase tourism revenues by $130,000 per year and create 4 new jobs in travel-related industries. For both routes, further impacts would occur as a result of multiplier effects -- perhaps doubling the direct effects -- and as a result of more extended stays by tourists on day and overnight trips.

In summary, these results suggest that, without efforts to promote the scenic and historic qualities of byways (beyond the posting of signs on the roads themselves and shading on the state map), byway designation does not appear to have significant economic impacts. However, local efforts to actively promote the scenic or historic qualities of Virginia Byways appear to have been successful in increasing tourism in the corridor.

☆ U.S. Government Printing Office : 1991 - 518-829/03281

Publication No. FHWA-ED-90-040
HEP-23/11-90(1M)QE